

## REMARKS

Reconsideration and allowance are requested in view of the remarks herein.

### The Examination

Claim 22 was withdrawn from consideration as being directed to a non-elected invention.

Claims 1, 4-7, 17-19, and 23 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over U.S. Patent 5,649,543 to Hosaka et al. (“Hosaka”) in view of U.S. Patent 6,616,613 to Goodman (“Goodman”), and in further view of U.S. Patent 6,443,906 to Ting et al. (“Ting”).

Claims 10 and 13 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Hosaka in view of Goodman and Ting, and further in view of U.S. Patent Application Publication 2001/0047125 to Quy (“Quy”).

Claims 14-16 were rejected under 35 U.S.C. Section 103(a) as being unpatentable over Hosaka in view of Goodman and Ting, and further in view of U.S. Patent Application Publication 2002/0173704 to Schulze et al. (“Schulze”).

Claim 21 was rejected under 35 U.S.C. Section 103(a) as being unpatentable over Hosaka in view of Goodman and Ting, and further in view of U.S. Patent 6,814,705 to Kawaguchi et al. (“Kawaguchi”).

Claim 24 was rejected under 35 U.S.C. Section 103(a) as being unpatentable over U.S. Patent 5,576,952 to Stutman et al. (“Stutman”) and further in view of U.S. Patent 5,649,543 to Hosaka.

Claim 25 was rejected under 35 U.S.C. Section 103(a) as being unpatentable over U.S. Patent 6,840,904 to Goldberg (“Goldberg”) and further in view of U.S. Patent 5,316,008 Suga et al. (“Suga”).

### The Prior Art

The Examiner cited the following prior art references in the Office Action mailed April 26, 2006.

Hosaka describes a device for measuring blood pressure that uses a ‘photoelectric pulse wave’ sensor to measure an optical signal from, e.g., a patient’s ear, and an electrical, ECG-like sensor to measure an electrocardiogram. A CPU analyzes this information to determine a propagation time, and from this a blood pressure.

Goodman describes a device for measuring blood pressure featuring a single optical sensor that measures an optical signal. A processor analyzes the optical signal along with calibration information to determine a patient’s blood pressure, which is then sent wirelessly to a computer system.

Ting describes a device for measuring blood pressure that features a wrist-worn device and transducer that presses against a patient’s radial artery. The transducer measures an analog voltage that is processed and related to blood pressure. Ting’s wrist-worn device can connect to a Bluetooth-enabled device to wirelessly transmit information.

Quy describes a generic health-monitoring system that sends health-related information (e.g. blood pressure) through a wireless link to an Internet-based system.

Schulze describes a generic communication module that receives information (e.g. blood pressure) from a variety of sensors, processes the information, and then sends it wirelessly for distribution on the Internet.

Kawaguchi describes a device for detecting arteriosclerosis that features a cuff and two pressure sensors.

Stutman describes a system for distributing medical alerts that receives medical information from conventional medical devices (e.g. a blood pressure monitor) and monitoring units worn by ambulatory patients, and after analyzing the information wirelessly sends a message to a subscriber unit.

Goldberg describes a portable, wrist-worn system that connects to a finger-worn ring that measures a variety of physiological information (e.g. blood pressure) and sends this information through a wireless link to an Internet-accessible computer.

Suga describes a wrist-worn watch that measures optical and electrical signals, and from these calculates a time difference that relates to a patient’s blood pressure.

## **Patentability Over The Prior Art**

To reject independent claims 1 and 23, the Examiner relies on Hosaka, which features a CPU that processes a generic electrocardiogram with a signal from a photoelectric detector to determine a ‘pulse wave propagation time’ and, eventually, a blood pressure value. The Examiner starts with Hosaka’s device and then combines it with Goodman’s optical system and Ting’s body-worn housing and short-range wireless transmitter to find our invention.

We disagree with this rejection because we believe the above-described combination can only be made after taking our invention as a starting point, and then, using hindsight, combing through the prior art to find all its features. Such a combination is not supported by Section 2143 of the MPEP, which is worth repeating for this Application even though all parties are well aware of its contents:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

We believe that the limitations of our invention, as described in the Office Action, are only found by combining separate references related by a common thread of mentioning the term ‘blood pressure’. We also believe that their general teachings are not nearly enough to motivate one skilled in the art to combine them, nor are they adequate to ensure a reasonable expectation of success after the combination. Finally, we believe that all the features of our invention are not taught even if the combination is made.

Starting with the Hosaka, the Examiner’s primary reference, we note the patent provides no teaching of a body-worn housing that includes both a microprocessor and a wireless component. Instead, Hosaka describes an undefined ‘CPU (‘1’ in Fig. 1) that processes measurements made, e.g., by a conventional pulse oximetry sensor attached to the ear or finger, as described in Fig. 9 and in col. 8, lines 1-10. The reference makes no reference to a specific form factor, focusing instead on a method used to calculate blood pressure from a pulse wave velocity.

A reader would then have to combine Hosaka with Goodman, a patent that devotes 44 pages to describing a variety of very specific optical techniques, but never once even hints at our claimed technique of determining a time difference between first and second time-dependent signals to measure blood pressure. Instead, the patent is dedicated to a system that only measures a single optical signal and combines it with a calibration to make a measurement. We simply don't understand how someone skilled in this art would be motivated to find this completely different measurement technique, which upon reading seems perfectly adequate, and reconstruct its optical system and insert it in Hosaka's technique to find our invention. And then after doing this, the reader would have to find Ting, which requires a pressure-measuring transducer and thus is even further removed, and somehow once again be motivated to combine his housing with the various parts of the previous references to find our invention.

Importantly, with regard to Ting's wireless transmitter, the patent states that 'Although the watch may be connected directly to a personal computer by a direct cable connection such as RS 323, Universal Serial Bus or other similar interface, it is contemplated that the watch could be connected to Bluetooth (sic) device for wireless connection' (col. 9, lines 40-44). This implies that Ting's wireless transmitter is external to his blood pressure monitor, whereas in our claims the wireless transmitter is 'comprised' by the housing. Since the Examiner relies on Ting to provide an element missing from Hosaka, a *prima facie* case for obviousness has not been made in view of the claims of our Application.

Further, with regard to independent claim 23, the Examiner relies on Goodman's description of a 'clip device' (col. 13, line 43 – col. 14, line 6) to teach our claimed patch that 'attaches the first module and the optical module to a patient'. Thus in this case, to find our invention, one skilled in the art would have to replace Goodman's entire optical system and associated measurement technique with those of Hosaka, which as described above are completely different in both their components and the physics they rely on. We respectfully note that this clearly goes against the premise of Section 2143.01 of the MPEP, which states:

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the

teachings of the references are not sufficient to render claims *prima facie* obvious.

In general, we believe the basic premise of the Examiner's 103 rejections—combining Hosaka with Goodman and Ting—requires combining multiple and very different techniques for measuring blood pressure, and thus would undoubtedly change the respective principles of operation described in these references. We therefore believe that this combination is not sufficient to establish a case of *prima facie* obviousness, particularly for claim 23.

In view of the above, we firmly believe that our invention as claimed can only be found by picking and choosing relevant features from a variety of several disparate references linked only because they mention 'blood pressure', and then using hindsight to combine them into a theoretical product. Such a combination goes against the spirit of Section 2143 of the MPEP, and thus we believe it should not be applied towards our invention. And as described above, even if the references are combined, we still do not believe they teach all our claimed features.

We see the combination of secondary references for the other independent claims as being even more removed. Like the primary references applied to claims 1 and 23 above, we believe the secondary references are linked only because they too generically mention 'blood pressure'. For claim 21, for example, Kawaguchi describes a cuff-based technique for measuring blood pressure that lacks any optical system or body-worn housing and relies instead on an external device to calculate blood pressure. Someone skilled in the art would have to remove Kawaguchi's pressure sensor, which is incorporated into a completely different type of measurement technique, and combine it with the teachings of three other references to find the claimed invention. Similarly, for claim 24, a reader would have to combine the primary references with Stutman, which focuses on an alert-generating system that happens to send a blood pressure value, to find, among other components, the claimed location-determining component. Finally, for claim 25, the reader would have to find Goldberg, which makes no mention of the core components of our invention, but simply describes a watch and an Internet-based system. This reference would then have to be combined as described above to find our invention.

In view of the above, we submit that the independent claims of the present Application are significantly removed from the Examiner's references. The dependent claims are even further removed. We therefore respectfully request a notice of allowance for all the pending claims of the present Application.

Very respectfully submitted,

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